SWAN RIVER NATIONAL WILDLIFE REFUGE

Kalispell, Montana

ANNUAL NARRATIVE REPORT

Calendar Year 1997

U.S. Department of Interior
FISH AND WILDLIFE SERVICE

NATIONAL WILDLIFE REFUGE SYSTEM

REVIEW AND APPROVALS

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	4-2-99		4/10/99
Refuge Manager	Date	Project Leader	Date

	11/10/99
Refuge Supervisor Review	Date

	11/10/99
Regional Office Approval	Date

INTRODUCTION

The Swan River National Wildlife Refuge(NWR), is located in northwest Montana, 38 miles southeast of the town of Creston, in the serene and picturesque Swan Valley Mountain Range. The Refuge was established in 1973 at the request of Montana Senator Lee Metcalf, who often hunted the area and desired to see it preserved. The Refuge was established under the authority of the Migratory Bird Conservation Act. It consists of 1,568 acres, with an additional 210-acre Forest Service inholding that is managed under a Memorandum of Understanding. The refuge boundary lies within the floodplain of the Swan River above Swan Lake and between the Swan Mountain Range to the east and the Mission Mountain Range to the west. The valley was formed when glacial water poured down the steep slopes of the Mission Range into Flathead Lake. The valley floor is generally flat, but rises steeply to adjacent forested mountain sides. Approximately 80 percent of the refuge lies within this valley floodplain, which is composed mainly of reed canary grass. Deciduous and coniferous forests comprise the remaining 20 percent. Swan River, which once meandered through the floodplain, has been forced to the west side of the refuge by past earthquakes and deposits of silt. The result of these geologic events have left a series of oxbow sloughs within the refuge floodplain.

The purpose of the refuge is "...for use as an inviolate sanctuary, or for any other management purpose, for migratory birds". Objectives of the refuge are to provide for waterfowl habitat and production and to provide for other migratory bird habitat. The refuge also provides a nesting site for a pair of southern bald eagles and a variety of other avian species. In addition, deer, elk, moose, beaver, bobcat, black bear and grizzly bears are known to inhabit the area. There are no significant developments or facilities on the refuge and present management is directed at maintaining the area in its natural state. The refuge is a satellite unit of the National Bison Range Complex. Day-to-day administration and operations are the responsibility of the on-site Assistant Refuge Manager located at Creston, Montana, 38 miles northwest of the refuge.

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A. HIGHLIGHTS

Estimated duck production decreased 31 percent; Canada goose production decreased 51 percent (Section G.3.).

The bald eagle pair hatched and successfully fledged two eaglets (Section G.2.).

An inter-agency working group was formed to assist with planning and developing a wildlife viewing platform on the Refuge.

B. CLIMATIC CONDITIONS

In 1997 weather conditions varied considerably. January precipitation was above normal. Rain and heavy snowfall continued in February and March, boosting yearly precipitation levels to 65 percent above the 30-year average for the first three months of the year. With the exception of April, November and December, above-average precipitation fell throughout the year. Precipitation totaled 35.70 inches, 34 percent above the 30-year average. Snowfall totaled 95.5".

Temperatures were near normal throughout the early winter months. January saw a yearly low reading of -16. A record low of 14 degrees was recorded on April 12th. Temperatures remained near normal during the summer months as Swan Lake residents enjoyed a balmy, pleasant summer. A yearly high of 86 was recorded in July and August. Temperatures in October, November, and December were above average, reflecting a drier than normal fall. As a result, snowfall during the last three months of the year totaled 13.5 inches, a very unusual occurrence in the Swan Valley. In 1997, snowfall totaled 95.5 inches. Little, if any, snow remained on the ground at the end of 1997.

Ice-out occurred on April 18th. Wetlands within the Refuge froze, then thawed several times in November before a final freeze-up in early December.

Climatic data for the refuge was provided by Ms. Joan Thuma, a resident of Swan Lake.

Table I. 1997 Climatic Data, Swan River National Wildlife Refuge

MONTH	TEMPERATURE		PRECIPITATION (INCHES)		SNOWFALL
	HIGH	LOW	1997	12-YR AV.	1997
January	40°	-16°	3.70"	3.12"	27.0"
February	44°	6°	3.90"	2.54"	34.0"
March	54°	2°	4.60"	2.06"	21.0"
April	60°	14°	1.95"	1.49"	3.0"
May	80°	32°	5.60"	2.41"	.0"
June	79°	38°	3.43"	1.98"	.0"
July	86°	46°	2.00"	1.57"	.0"
August	86°	40°	2.30"	1.62"	.0"
September	80°	31°	3.50"	1.59"	.0"
October	64°	27°	3.07"	1.76"	.0"
November	49°	13°	1.65"	2.98"	1.5"
December	45°	14°	2.20"	3.48"	12.0"
			37.90"	26.60"	98.5"

C. LAND ACQUISITION

1. Fee Title

There was no land acquisition to the refuge in 1997.

E. ADMINISTRATION

The Swan River NWR is a satellite unit of the National Bison Range Complex(NBR), and is manned by the Refuge Manager located at the Creston Fish and Wildlife Center. Refuge activities such as budgeting, detailed administrative and operational functions are supervised by the Project Leader at NBR. Day-to-day administrative functions are provided by the administrative staff located at the Creston Fish and Wildlife Center. Refer to the Wetland District Narrative for administrative and budgeting details.

1. Personnel

On May 11th, Eric Skramstad EOD as a bio-aide. Eric assisted with posting and census on the refuge, as well as other duties within the wetland district. His position was terminated on 9/27/97.

On November 10th, Roxanne Rogers EOD as a wildlife biologist. Roxanne's duties were to develop a "Partners for Wildlife" program in Flathead County and assist with various refuge/WMD duties.

4. Volunteer Programs

During the summer months, Ellie Jones, a resident of Swan Lake and an Audubon member, continued her voluntary efforts in keeping the refuge information box supplied with refuge maps, FWS brochures and bird lists, (Sec. H.6.).

6. Safety

When safety meetings were held by the Creston Fish and Wildlife staff, refuge personnel attended.

F. HABITAT MANAGEMENT

2. Wetlands

Approximately 1,254 acres of the refuge are classified as a wetland/grassland complex. All of this acreage lies within an "alluvial floodplain" adjacent to the south end of Swan Lake. Vegetation is composed primarily of mono-typic stands of reed canary grass.

With the exception of a culvert under Bog Road in Spring Creek and a staff gauge within the creek, which in the past has been used for recording water flow levels, no other water control structures, facilities or developments exist on the refuge.

Approximately 95 percent of the refuge flooded this year due to abnormally high snow packs in the surrounding mountains. Flood waters flow into the refuge from several tributaries: Swan River, Bond Creek, Yew Creek and Spring Creek. Flooding occurs on an annual basis in May, June and July when mountain snowpack begins to melt. Warmer temperatures in April, May and June resulted in a considerable amount of runoff. Flows in the Swan River and other smaller

tributaries remained high well into July. Warm weather in July and August resulted in the reed canary grass meadows drying out by late August and early September.

3. Forests

Forested areas comprise approximately 313 acres of the refuge. Wooded tracts lie primarily on the west, south and southeastern portions of the refuge. Tree species include old growth fir, spruce, cedar and larch. Large cottonwood trees are found along the banks of the Swan River. All forested units are maintained in their natural state.

7. Grazing

There was no grazing on the refuge this year due to wet soil conditions. The lack of interior cross fences and willing permittees limits our use of this management tool.

8. Haying

There was no haying on the refuge this year. For several years attempts have been made to locate hay permittees; however, there have been no "takers". Farming and ranching activities are limited in the Swan Valley. Ranchers who hay in the valley or the Kalispell area are generally reluctant to travel the distance to the refuge; therefore, it has been difficult to find willing permittees. Haying the dense stands of reed canary grass would be beneficial in restoring vegetative quality, as well as providing additional open marsh areas for waterfowl pairs and broods.

10. Pest Control

Canada thistle continues to be the most persistent noxious weed found on the refuge. Infestations are generally limited to elevated upland sites within wetland areas and the nesting islands located in the northwest portion of the refuge. Chemical control is generally not feasible due to the proximity of wetland sites. Several days were spent this year chopping Canada thistle on the refuge.

G. WILDLIFE

2. Endangered Species

The Swan Mountain Range and Mission Mountain Range have been designated as a "habitat corridor" of the threatened grizzly bear. Montana Department of Fish, Wildlife & Parks concluded a 10-year study in July of 1997 which determined the status of the grizzly in the northern end of this range. Data from the study has shown the population is declining due to excessive mortality. Mortality factors include "management removals" due to urbanization of the valley and illegal kills.

The nesting pair of bald eagles were observed on the refuge in mid-April. Two eaglets were fledged in May. As in past years, the adult pair and young eaglets were often observed utilizing the refuge and the surrounding area on several occasions, presumably feeding on waterfowl, fish and rodents. In cooperation with State monitoring efforts, we again recorded our periodic observations of the eagles and submitted the annual state bald eagle nesting forms. Since 1987, 20 eaglets have been fledged at the Swan nest site. On several occasions throughout the year, "transient" eagles were also observed on the refuge. These birds are "migratory" in nature and spend varying lengths of time on, in, or near the refuge feeding, resting and loafing.

3. Waterfowl

Observed duck pairs decreased 60 percent from 1996 figures. (Table II).

Table II. Pair Count Data 1992 - 1997

SPECIES	1992	1993	1994	1995	1996	1997
Mallard	110	71	108	78	114	21
Cinnamon/BW teal	24	21	36	21	25	0
Common goldeneye	28	24	25	22	22	30
Wood duck	5	5	9	4	11	4
Common merganser	3	0	6	7	6	6
Widgeon	2	1	5	0	5	7
Pintail	0	0	0	0	0	0
Ring-necked duck	5	5	8	0	0	12
Barrows goldeneye	0	0	0	2	0	0
Shoveler	0	4	0	0	3	0
Bufflehead	0	4	5	3	4	0
Green-winged teal	0	0	0	0	0	0
Gadwall	0	2	0	0	1	0
Lesser scaup	0	2	6	0	8	0
Hooded merganser	0	0	5	0	0	0
Ruddy duck	0	0	0	0	3	0
Total	177	139	213	137	202	80

1997 duck production figures were calculated using a hen productivity rate of .70 based on data supplied by Dr. Joe Ball at the Cooperative Wildlife Research Unit at the University of Montana. Using this productivity rate, an average brood size of 5.1, and a brood survival rate of .7, estimated production for 1997 came to 200, a 31 percent decrease from 1996 production estimates (Table III).

Table III. Estimated Duck Production, 1988-1996 Swan River National Wildlife Refuge

	1989	1990	1991	1992	1993	1994	1995	1996	1997
Ducks	147	39	175	256	198	304	195	288	200

The reason for the decrease in duck production may be attributed to high water levels on the refuge. Excessive runoff in early May resulted in nearly 95 percent of the refuge flooding this year. Very little emergent vegetation was available for courtship and pair bonding, hence the decrease in the number of observed pairs and subsequent duck production.

Waterfowl use and population estimates on the refuge are based on aerial census flights and random ground counts made in conjunction with on-going work activities. Peak population estimates are listed in Tables IV and V. Total waterfowl use-days this year were estimated at 144,780, a 12.0 percent increase from CY 96 estimates.

Table IV. Peak Waterfowl Populations, Spring Migrations Swan River National Wildlife Refuge

	1989	1990	1991	1992	1993	1994	1995	1996	1997
Swans	180	150	100	10	125	200	100	100	20
Canada geese	205	400	150	140	250	350	300	125	75
Ducks	2595	1650	5600	500	1465	2585	850	850	865

Table V. Peak Waterfowl Populations, Fall Migrations
Swan River National Wildlife Refuge

	1989	1990	1991	1992	1993	1994	1995	1996	1997
Swans	*55	150	250	25	50	150	75	55	25
Canada geese	150	350	200	200	200	200	100	200	125
Ducks	1086	550	2235	2550	340	1945	885	1965	780

*Observed in December

In years past, Canada goose production estimates have been based on aerial pair counts done in April, followed by aerial brood counts in early June. Documenting actual nesting on the refuge has been difficult due to high water levels and widespread inaccessibility of the refuge. No aerial Canada goose pair count surveys were conducted in 1997.

Canada goose production estimates are listed in Table VI. These figures may or may not represent actual production on the refuge. Broods hatched within the Swan River/Lake system often migrate to the refuge in search of food, loafing sites, or for safety. Figures listed in Table VI reflect observations made on the day of the aerial survey and do not necessarily reflect production that actually occurs on the refuge. These aerial counts, conducted since the mid-70's, are our most accurate, long-term index of goose production in the Swan Lake/River Refuge system.

Canada goose pair count data for 1997 cannot be compared to previous year's data since no aerial survey was completed this year. Therefore, the annual percent change in pair numbers cannot be calculated.

Canada goose brood surveys were flown on June 10th. Estimated production decreased 51 percent when compared to productivity in 1996. It is suspected the reason for the decrease in Canada goose production may be attributed to very high water levels and subsequent lack of ground nesting sites.

Table VI. Swan River NWR, Canada Goose Breeding Pairs and Estimated Product

	1989	1990	1991	1992	1993	1994	1995	1996	1997
Breeding Pairs	34	42	23	38	29	26	30	25	*
Number of Young Observed	45	84	52	26	85	9	56	39	19

* No aerial pair survey completed in 1997

We continued our voluntary monitoring efforts with the Swan Lake Chapter of the Audubon Society in an attempt to locate loon nests on the refuge. No loon nests or broods were observed on the refuge in 1997.

4. Marsh and Water Birds

Annual flooding of the refuge in the late spring and early summer months often provides excellent marsh habitat for sora rails, pied-billed grebes, red-necked and horned grebes, American bitterns, great blue herons, and many other species of marsh and water birds. Populations peaked during the mid and late summer months. As cooler weather set in during early October, this group of birds readily departed for warmer climates. Nesting probably occurred on the refuge, but may have been limited due to high water levels. No formal nesting surveys were conducted this year.

5. Shorebirds, Gulls, Terns & Allied Species

Species utilizing the refuge included California and ring-billed gulls, black tern, Wilson's phalarope, common snipe, American avocet, killdeer, and several species of sandpipers. Populations peaked in late July and early August with an estimated 22,000 use-days.

6. Raptors

Coniferous and deciduous forest areas on the refuge continued to offer excellent resting and loafing sites for many raptor species. Northern harriers, Swainson's hawks, red-tailed hawks, and great-horned owls were observed on nearly every visit to the refuge. Nesting has occurred in the past, but was not documented this year.

7. Other Migratory Birds

In past years, as many as 64 species of non-game migratory birds have been observed utilizing the refuge during the spring, summer and early fall months. Red-winged blackbirds, common yellow-throats, song sparrows, tree swallows and common snipe are the most frequently observed species. Montana Department of Fish, Wildlife and Parks' researchers, conducting non-game surveys on Forest Service tracts in northwest Montana, have reported that the refuge continues to have the highest bird density of all surveyed areas in NW Montana.

8. Game Mammals

The refuge continued to provide excellent year-round habitat for many indigenous big game mammals. Deer and elk tracks are commonly seen in most upland areas on the refuge and on Bog Road. In the late summer and early fall months, cow moose and their calves are often observed in marshy areas in the northwest corner of the refuge. Elk are known to winter within the old growth fir and spruce groves.

In 1997, white-tailed deer were the most commonly observed game mammal. Resident populations are estimated at over 50. Fawning probably occurs but was not documented.

10. Other Resident Wildlife

Coyotes, beaver, muskrat and raccoons are known to inhabit the refuge. Observations were generally made near the river or on backwater sloughs within the refuge.

In past years, prolific beaver activity along the shoreline of Swan River resulted in destruction of many old growth cottonwood trees. Little beaver activity was observed this year. The reason for this lack of activity may be

attributed to a continued cyclic decline in the beaver population. Illegal trapping on the refuge may also have had an impact on the population but this was not documented.

In July of this year, members of the local Audubon Club spent a day conducting an amphibian survey of approximately 100 meters of Spring Creek. The refuge is rich in amphibian habitat. Observers identified 12 spotted frogs, 2 western toads, 3 unknown species of frog larvae, one Western Garter snake and 20 unknown Anurans. The most significant observation was over 1,000 Western Toad larvae located in the Spring Creek culvert.

11. Fisheries Resources

Game fish common to Swan Lake and portions of Swan River include yellow perch, bull trout, northern pike, kokanee salmon, largemouth bass, cutthroat, brook trout and mountain whitefish. Densely vegetated areas of Spring Creek, which empties into Swan Lake on the northeast corner of the refuge, provide excellent pike spawning habitat. Water levels were extremely high this year. While conducting waterfowl pair counts in mid-May, we observed many "swirls" within flooded portions of the creek and the refuge, indicating the presence of spawning females. The entire refuge, including Spring Creek, is closed to fishermen as part of the annual refuge closure from March 1 - July 15 (Section H.1.).

H. PUBLIC USE

1. General

Despite the refuge's generally secluded, out-of-the-way location, lack of established interpretive foot trails and annual flooding, non-consumptive public use of the refuge continues. There is no accurate way of determining exact use and number of visits; however, based on random "car counts", discussions with the "locals" and demand for refuge leaflets (Sec. H.6.), we may have had as many as 6,000 non-consumptive visits this year. Whenever visits to the refuge were made for on-going work programs, we often observed vehicles parked in the parking lot.

7. Other Interpretive Programs

In 1997, much time was spent organizing and planning initial efforts to develop a wildlife viewing platform on the refuge. Several agencies and non-government organizations assisted with the initial design and planning. This included representatives of the Forest Service, Montana Department of Fish, Wildlife and Parks, members of the Audubon Club, the Swan Lake Chamber of Commerce and local Swan Lake citizens. An inter-agency agreement was signed in which the Forest Service supplied architectural planning and design. The local NRCS office assisted with survey of the area. Project grants were applied for and improvements to the Bog Road access route were discussed with the Lake County Commissioners and highway personnel. A Watchable Wildlife grant totaling $7,000 was received. After many meetings and much comment it was determined that an accessible viewing platform and a kiosk would be built in 1998. Interpretive signs would also be developed and included in the project. In August, the project was scrutinized and questioned by "Friends of the Wild Swan, an environmental advocacy group. A response was prepared. Due to the time consuming planning effort, no construction began in 1997. In October, the Forest Service provided $5,000 for construction materials to be used in 1998.

8. Hunting

Approximately 40 percent of the refuge is open to waterfowl hunting. The majority of the waterfowl hunt area is located north of Bog Road, along portions of the refuge's lake shoreline and along portions of Swan River.

Steel shot is required. Big game and upland game bird hunting is prohibited.

In 1997, the waterfowl season ran from October 4 to January 17 for ducks and from October 4 to January 11 for Canada geese. As usual, several parties were out for the initial opener and had constructed temporary blinds along the lake's shoreline. Cool, overcast weather aided hunter success which was generally good throughout the season. Several freeze/thaw periods occurred in late November which limited hunting visits as well as success. Late season hunting activity was limited to open stretches of the Swan River; however, success was poor. Total waterfowl hunting visits this year were estimated at 250.

9. Fishing

The annual closure period limits spring and early summer fishing activity on the refuge. After July 15 anglers often venture into Spring Creek looking for pike; however, success is limited due to heavy vegetation in the creek. Those portions of Swan River which flow through the refuge are open the entire year. Fishing activity is often limited in the river due to high water levels during the spring and early summer months and low flows in late summer and early fall.

The most popular fishing spot on Swan Lake continued to be at the mouth of Spring Creek just outside the refuge boundary. Northern pike often lie in the reed beds before going upstream to spawn in the dense aquatic vegetation inside the refuge boundary. Fishermen take advantage of the situation by anchoring just outside the refuge boundary. Fishing success in 1997 was very good.

17. Law Enforcement

Patrol efforts are generally made during the waterfowl and big game seasons. No citations were issued this year.

During the winter months several calls were received from local residents concerning snowmobile trespass on the refuge. Even though we responded to these calls, no citations were issued because the "alleged" trespassers were gone by the time we arrived at the refuge.

In mid-August two men drowned in Swan Lake. Search and rescue personnel believed the men drowned after their jet skis ran out of gas at night near the refuge boundary. Their bodies were found in early October, approximately 250 yards from the refuge.

I. EQUIPMENT AND CONSTRUCTION

4. Equipment Utilization and Replacement

All equipment utilized on the refuge is also used in daily operations and work activities on Flathead County WPA's. See the Wetland District Narrative for further information.

J. OTHER ITEMS

4. Credits

Assistant manager Ray Washtak wrote this report. It was edited and proof read by Sharon Hooley, administrative clerk at the Creston Fish and Wildlife Center.